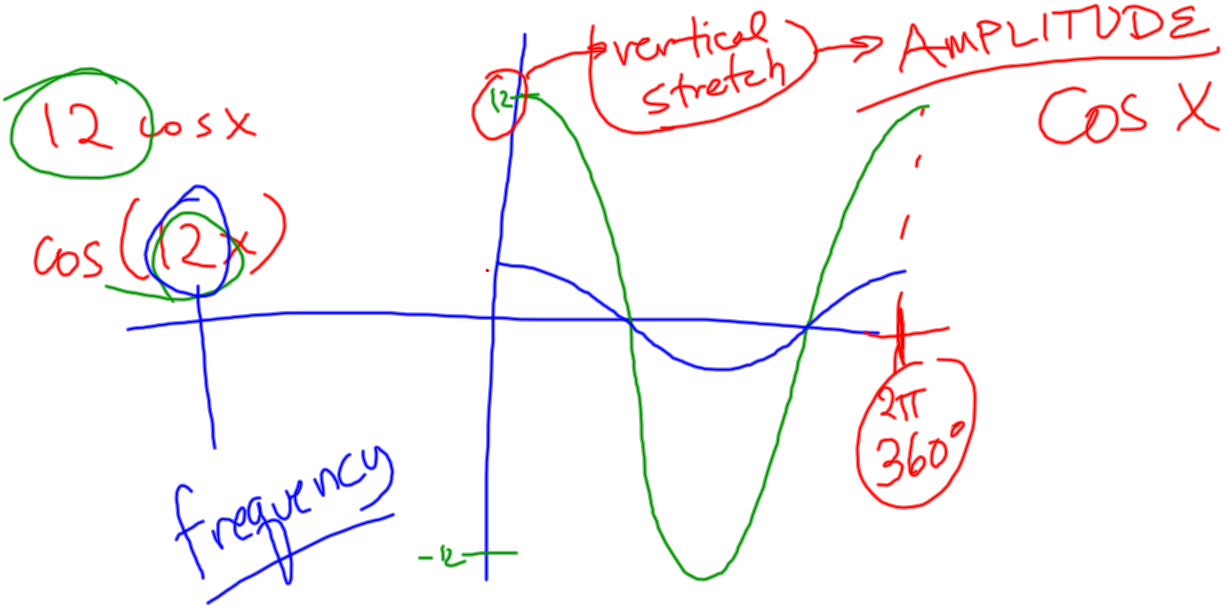
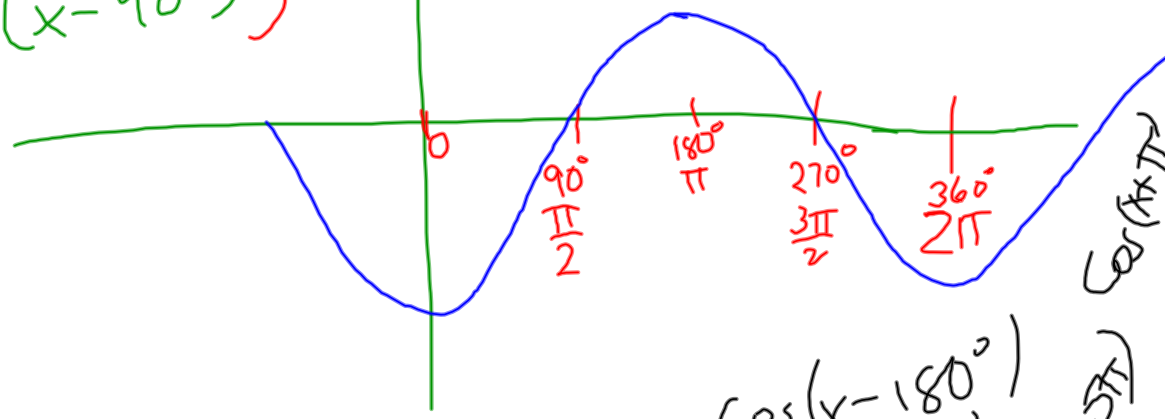

12 cos x
cos (12x)
frequency
12
-12
vertical stretch
AMPLITUDE
cos x
2π
360°

$\cos\left(x-\frac{\pi}{2}\right)$ or $\cos(x-90^\circ)$ $= \sin(x)$

horizontal shift = phase shift



$\cos(x+\pi)$

$\cos(x-180^\circ)$

$\cos(x-\pi)$

$\cos(x+3\pi)$

$\cos(x+5\pi)$

$\cos(-x)$

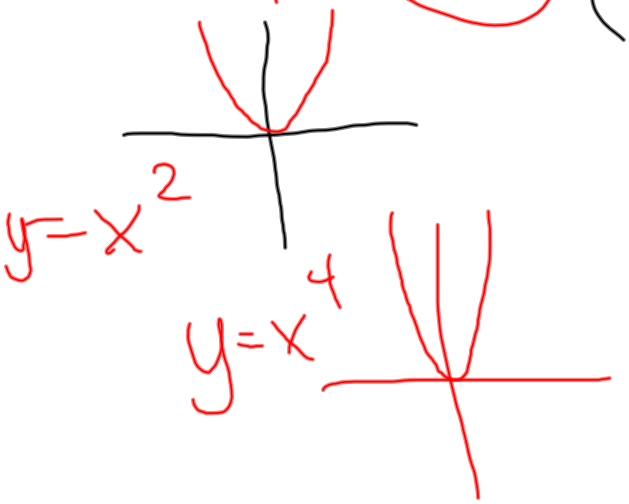
horizontal reflection

functions where

$f(-x) = f(x)$

are called

EVEN fns



$-\cos(x)$

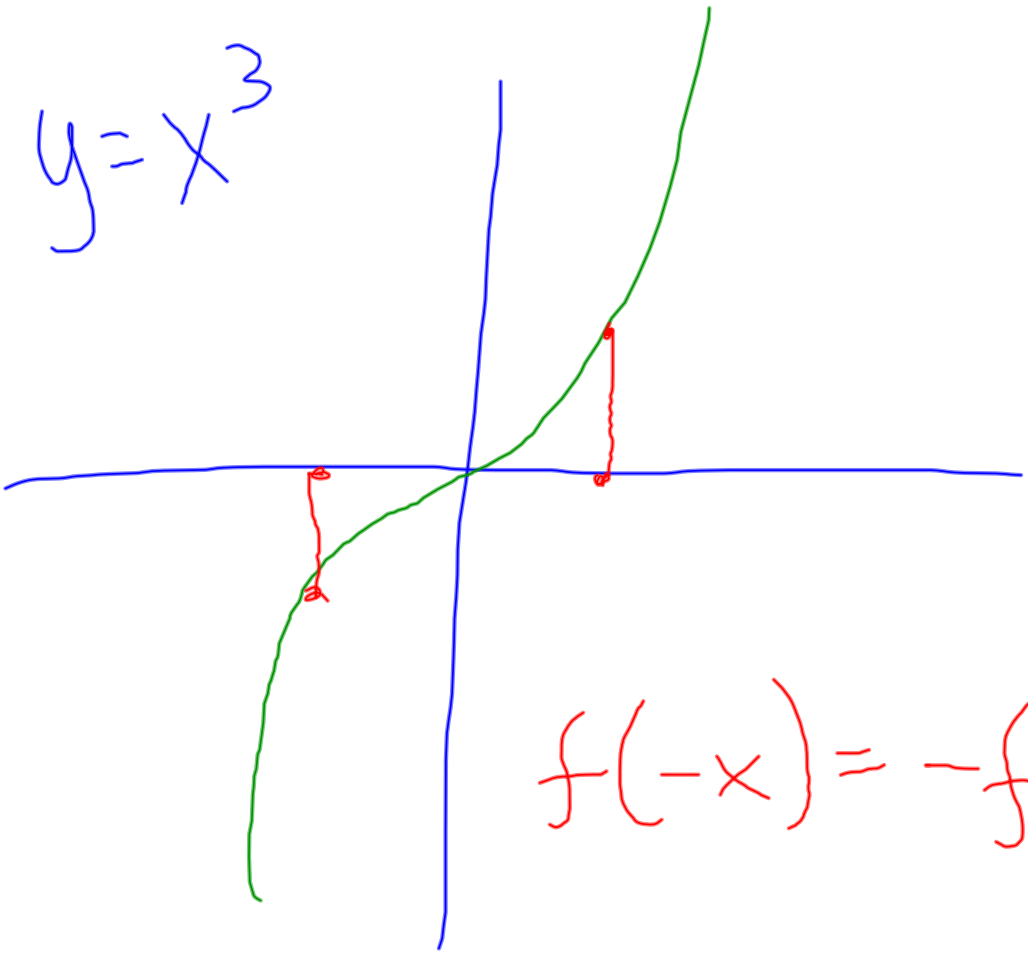
vertical reflection

flips over x-axis

$= \cos(x \pm \pi)$

ODD fn

$y = x^3$



$f(-x) = -f(x)$

sin x